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INVESTIGATION OF INAPPROPRIATE POLLUTANT ENTRIES INTO STORM DRAINAGE SYSTEMS

A User's Guide

by

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NOTICE

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FOREWORD

Today's rapidly developing and changing technologies and industrial products and practices frequently carry with them the increased generation of materials that, if improperly dealt with, can threaten both public health and the environment. The U.S. Environmental Protection Agency is charged by Congress with protecting the Nation's land, air, and water resources. Under a mandate of national environmental laws, the Agency strives to formulate and implement actions leading to a compatible balance between human activities and the ability of natural systems to support and nurture life. These laws direct the EPA to perform research to define our environmental problems, measure the impacts, and search for solutions.

The Risk Reduction Engineering Laboratory is responsible for planning, implementing, and managing research, development, and demonstration programs to provide an authoritative, defensive engineering basis in support of the policies, programs, and regulations of the EPA with respect to drinking water, wastewater, pesticides, toxic substances, solid and hazardous wastes, and Superfund-related activities. This publication is one of the products of that research and provides a vital communication link between the researcher and the user community.

The purpose of this User's Guide is to provide guidance to municipalities for investigating non-stormwater entries into storm drainage systems. Contaminated non-stormwater entries into storm drainage systems have been shown to contribute substantial levels of contaminants to the Nation's waterways. These entries may originate from many diverse sources including sanitary wastewaters from leaky or directly connected sanitary sewerage and from poorly operating septic tank systems, washwaters from laundries and vehicle service facilities, and many types of industrial wastewaters that are discharged to floor drains leading to the storm drainage or from direct industrial wastewater connections to the storm drainage system. Conventional pollution control programs may be ineffective if these pollutant sources are not identified and corrected.

This User's Guide will be useful to municipalities in conducting required studies as part of their stormwater discharge permit activities, in addition to other interested users. It will enable users to identify the type and to estimate the magnitude of non-stormwater pollutant entries into storm drainage systems and to design needed pollution control activities. An associated demonstration project (Pitt and Lalor publication pending) describes the development and testing of the procedures presented in this User's Guide.

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ABSTRACT

This User's Guide is the result of a series of EPA sponsored research tasks to develop a procedure to investigate non-stormwater entries into storm drainage systems. A number of past projects have found that dry-weather flows discharging from storm drainage systems can contribute significant pollutant loadings to receiving waters. If these loadings are ignored (e.g., by only considering wet-weather stormwater runoff), little improvement in receiving water conditions may occur with many stormwater control programs. These dry-weather flows may originate from many sources, the most important sources may include sanitary wastewater or industrial and commercial pollutant entries, failing septic tank systems, and vehicle maintenance activities. After identification of the outfalls that contain polluted dry-weather flows, additional survey activities are needed to locate and correct the non-stormwater entries into the storm drainage systems.

This User's Guide contains information to allow the design and conduct of local investigations to identify the types and to estimate the magnitudes of these non-stormwater entries.

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This User's Guide contains information that has been developed and tested in a number of separate research reports investigating inappropriate pollutant entries into storm drainage systems. Many case studies were reviewed during early parts of this research to identify the most appropriate methods of investigation. Information that was obtained from these cities is gratefully acknowledged.

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